



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,849	12/07/2005	Miki Wolf	1318MMG-US	1965
7590	12/13/2007		EXAMINER	
David Klein Dekel Patent Beit Harofim Room 27 18 Menuha VeNahala Street Rehovot Israel, ISRAEL			RUTLAND WALLIS, MICHAEL	
			ART UNIT	PAPER NUMBER
			2836	
			MAIL DATE	DELIVERY MODE
			12/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/559,849	WOLF ET AL.
	Examiner	Art Unit
	Michael Rutland-Wallis	2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 20 November 2007.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-4 and 6-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4 and 6-16 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 19 January 2007 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/12/2007 has been entered.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-4 and 6-16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. There is no basis in Applicant's original disclosure for the negative limitation contained within claims 13 or 14 "magnetic switch said capacitor are two lumped elements". Applicant cites the negative limitation in the amended claims is clearly disclosed in the original drawings. The Office, however, finds no indication of the lumping of elements in the original drawings. The only mentioning of a lumping arrangement is found in the Weiner reference. Therefore Applicant's added limitations contained within claims 13 and 14 fail to comply with 35 U.S.C. 112, first paragraph.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Cravey (U.S. Pat. No. 6,362,604)

With respect to claim 1 Cravey teaches a high voltage magnetic compression modulator comprising: a low-voltage part (left of transformer, see Fig. 4) comprising an energy source (item 10) connected to a primary winding of a pulsed transformer (item 20); and a high-voltage part (right of transformer, see Fig. 4) comprising a secondary winding of said pulsed transformer connected to a capacitor (item 44), said capacitor being connected to a magnetic switch (item 42), said magnetic switch being connected to a load (item 24); characterized in that said magnetic switch is distanced separate (see schematic separation of item 42 and 44) from said capacitor and in that a unidirectional low-impedance path (item 102) for the charge of said capacitor is connected in parallel (see for example circuit branch in Fig. 4) to said load, and wherein said low impedance path includes a freewheeling diode (item 36).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 6-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cravey (U.S. Pat. No. 6,362,604) in view of von Bergmann (U.S. Pat. No. 6,999,492)

commutator. Von Bergmann teaches the low-voltage part further comprises a storage capacitor (C1) and a fast high-current commutator (Q1), all connected in series in a loop (Fig. 3) with said primary winding of said pulsed transformer (302), and wherein said energy source comprises a capacitor charger (voltage source). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to include a fast high-current commutator in order to control the saturation of the magnetic switch.

With respect to claims 6-7, 9 and 13-14 Cravey teaches a high voltage magnetic compression modulator comprising: a low-voltage part (left of transformer, see Fig. 4) comprising a charger (item 10) with a first terminal connected to a first terminal of a storage capacitor (item 12 or 14), and with a second terminal (ground) connected to a second terminal (lower terminal) of to a first terminal of a low-voltage winding (primary windings) of a pulsed transformer (item 20), the second terminal (upper terminal) of said low-voltage winding being connected to the second terminal of said storage capacitor; and a high-voltage part (right of transformer, see Fig. 4) formed by said high-voltage transformer (item 20) whose secondary winding (right side winding) is connected in parallel (see connection in Fig. 4 for example) to a first capacitor (item 44) and by a first of its terminals to a first terminal of a second capacitor, and by a second of its terminals to a first terminal of a magnetic switch (item 42), a second terminal of the magnetic switch being connected to a first terminal of a load (item 24), a second terminal (ground) of said secondary winding being connected to a second terminal (upper terminal) of said load characterized in that said magnetic switch is distanced separate (see schematic

separation of item 42 and 44) from said second capacitor and in that a low-impedance path (item 102) is provided for the charge of said second capacitor through a freewheeling diode (item 36) connected in parallel see for example circuit branch in Fig. 4) to said load. Cravey teaches the low voltage part includes a storage capacitor (item 12), however does not teach the further use a fast high-current commutator. Von Bergmann teaches the low-voltage part further comprises a storage capacitor (C1) and a fast high-current commutator (Q1), all connected in series in a loop (Fig. 3) with said primary winding of said pulsed transformer (302), and wherein said energy source comprises a capacitor charger (voltage source). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to include a fast high-current commutator in order to control the saturation of the magnetic switch. Cravey teaches the use of a pulsed transformer, However does not teach the transformer is wound on a ferromagnetic core. The use of a ferromagnetic core in transformer design is well known means to control flux and reduce magnetizing current. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to use a transformer with a ferromagnetic core in order to reduce magnetizing current and better magnetically couple the windings.

With respect to claim 8 Cravey does not teach the first terminal is its negative terminal and said charger second terminal is its positive terminal. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify von Bergmann to reverse the polarity in order to utilize negative voltage and negative logic.

With respect to claim 10 Cravey as modified above teaches the said ferromagnetic core. A detailed discussion relating to the magnetic curve of the core of Weiner is not given typical ferrite core pulse transformer have regular rectangular magnetization curves it would have been obvious to one of ordinary skill in the art at the time of the invention to use such a core in order to increase the efficiency and effectiveness of the transformer.

With respect to claim 11 Cravey teaches a similar pulse forming network to that system disclosed by von Bergmann. Cravey teaches (col. 10 lines 1-10) plural embodiments which may use multiple magnetic switches and compression stages. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify von Bergmann to use multiple stages in order to reach higher voltage levels and rise times.

With respect to claim 12 von Bergmann teaches at least one of said first magnetic switches is implemented (col. 4 lines 55-60) as a high-voltage transformer wound on a ferromagnetic core having a rectangular magnetization curve.

With respect to claim 16 Cravey teaches the magnetic switch is connected in series with said capacitor (see connection in Fig. 4).

Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cravey (U.S. Pat. No. 6,362,604)

With respect to claim 4 Cravey teaches the use of a pulsed transformer, However does not teach the transformer is wound on a ferromagnetic core. The use of a ferromagnetic core in transformer design is well known means to control flux and reduce

magnetizing current. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to use a transformer with a ferromagnetic core in order to reduce magnetizing current and better magnetically couple the windings.

With respect to claim 15 Cravey teaches the magnetic switch is connected in series with said capacitor (see connection in Fig. 4).

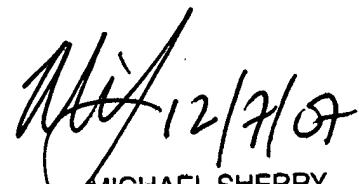
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRW



12/7/07  
MICHAEL SHERRY  
SUPERVISORY PATENT EXAMINER